STUDY PROJECT

"MEDICAL ROOTS:" THE EVOLUTION OF MODERN SUPPORT DOCTRINE IN THE AMERICAN CIVIL WAR

BY

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USAWC MILITARY STUDIES PROGRAM

"MEDICAL ROOTS:" THE EVOLUTION OF MODERN SUPPORT DOCTRINE IN THE AMERICAN CIVIL WAR

INDIVIDUAL STUDY PROJECT

by

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ABSTRACT

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PREFACE

This Individual Study Project was produced under the aegis of the US Army War College Study Program as a part of the resident student curriculum. The scope and general methodology were developed by the author under the guidance of faculty advisers. The general approach was to first review official documents available in the US Army Military History Institute and then to generally review the wealth of secondary sources held by the Institute. The materials were abundant, rich and fascinating. The findings were combined with an abiding interest in Civil War History and the profession of health care administration to produce the paper. Special gratitude is owed the staff of the Military History Institute and Professor Jay Luvaas, the study adviser, for their enthusiastic and able support.

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Background

Manassas Junction, a strategically important rail center in Northern Virginia just west of Washington, was the scene of the first great battle of the American Civil War. A poorly prepared Union Army was hurried into battle by its impatient public, press and politicians, anxious to see an early end to a troublesome conflict. Little did the country know that this was only the beginning of a terrible struggle which would take more American lives than two future World Wars. The battle offered other unpleasant revelations in the stinging Union defeat. First, the war would not be short. Secondly, it revealed just how poorly prepared to wage war the Union really was. Finally, so decisive was the Confederate victory that many actually feared for the future of the Union. Had General J. E. Johnston exploited his victory, as would generals on both sides often mysteriously fail to do, the war might have reached a very different conclusion.

Our purpose here, however, is not to speculate about other outcomes. Rather, our focus will be on the dramatic evolution of the Union Army after First Manassas. In barely two years, the Army routed there was transformed into a formidable fighting force, perhaps unsurpassed by any in the world until well into the twentieth century. Evolutionary advances in technology, organization, and tactics fundamentally altered war-making. While the Union industrial base and the advent of mechanization are generally cited as the bases for eventual victory, subtle changes in the military machine occurred which had equally profound impact. Some were so gradual that they often escape notice and reporting.

A case in point is the Army Medical Department's doctrine for combat medical support. A steady evolution in the rationalization of support can

be traced in a study of the Union Army from 1861 to 1865.[1] From the deplorable chaos of the early battles to the commendable medical apparatus at work in the closing campaigns, one can grasp the magnitude and significance of refinements in medical care at all levels. Most remarkably, the essentials of tactical and theater medical support which came out of this period remain substantially unchanged in the United States Army of 1983.

The substance, origin, and modern implications of changes in doctrine which evolved during the Civil War are the subject of this paper. This approach offers insight into the "roots" of current practice and, more importantly, provides a graphic example of the accommodation of medical practice to warfare in transition. By identifying the forces which shaped that doctrine, one can better appreciate how it should be employed, its relevancy as warfare further changes, and the adequacy of current doctrine in modern war.

The Early Scene

"Behind the sickness and mortality statistics of the Civil War lies jealousy, ignorance, stupidity, and inefficiency."[2] Harsh statements such as this are probably fair descriptions of medical care early in the war. The central entity was of course the regiment, as volunteers were recruited locally and sent off to war in the regiment. They were led by appointed and elected officers and went into battle as provisioned by local communities. Field medical support was likewise chiefly of the regimental model, an arrangement soon characterized by bungling and confusion.[3] Examples abound where medics of one regiment refused to care for patients of another.[4]

The regimental aid station was the chief source of "hospital" care. Other hospital organizations were sporadic if present at all, and medical

care was provided in available buildings with little regard to the overall tactical dispositions of units or a general battle plan. Records fail to reveal any carefully developed concept of battlefield support or "relief" as it was generally called in the reports.[5] Provisioning was uncoordinated because of the linkage to regimental self-sufficiency. Standards in types and amounts of war stocks were yet to be developed. In brief, organization for medical care greatly varied and appears to have been more dependent upon personality than plan.

At the highest levels, the Medical Department was equally impotent to effect events and provide for the Army. A few pages of the Army Regulations of 1861 embodied the total meager doctrine which charged the Quartermaster with "arranging ambulance, tentage, and service for medical support."[6]

Early efforts to reform the system focused almost exclusively on a field evacuation or ambulance system. The overarching deficiency of the medical apparatus in 1861 was, however, the absence of a coherent "system" of battlefield care, casualty removal, and management to the interior. While elements of a system existed, they lacked connectivity. In essence, this Army was no better supported from a medical point of view then were European Armies half a century before. While medical technology had advanced its practice, American military applications had eluded the medical leadership and reformers.

Evolution of a Doctrine

While the transformation of medicine in the Civil War can be depicted in various ways, perhaps the most effective is to concentrate on the care of combat casualties during and after important battles. It is unnecessary to cover all theaters or all battles in a theater to illustrate the dramatic

change in care provided to the wounded. Consequently, this study will concentrate on three crucial battles of the Army of the Potomac in the East. Others could have been selected, but none better reflect medicine as it was practiced, the positive effects improvements had when they were instituted, and the maturation of the medical care system during the war. These battles also vividly depict Civil War medicine at its worst, in its evolutionary stages, and finally at its best.

A comprehensive description of each battle is unnecessary for thi purpose. Only a general development of each engagement is required t illustrate how the medical organization was employed, its accomplishm or failures, and how practices differed in the battles. Of particula concern is how each engagement stressed the medical community and the effectiveness of its reaction.

First Manassas--In this first battle, the Confederate objective was to control the key rail center and pressure the enemy capitol. To threaten the Federal Capitol was to gain the strategic initiative and was to characterize Confederate strategy and generalship throughout the war. Union forces, commanded by a cautious general, Irwin McDowell, were determined to deny the Confederates and to relieve pressure against Washington. On July 21, 1861 the Union Army leisurely marched the twenty-one miles from Washington to Manassas. McDowell had developed a detailed and rather sound plan of battle, classic in tactics of the day. Seizing the initiative himself, he would, by a turning movement, attack the Confederate left flank disposed just north of Manassas along Bull Run. His plan generally went well until fatigue, poorly conditioned troops, inexperienced leadership, and arrival of confederate replacements took their toll. His forces were routed, fleeing the battlefield to Washington, abandoning arms, provisions, and wounded comrades.

Although future battles would record far greater numbers of casualties (First Manassas saw 481 Union killed, 1011 wounded, and 1216 missing[7]), none would reflect more poorly upon the medical establishment.

First Manassas, because of a primitive military organization, was a battle of brigades. While the Union forces had been organized into divisions, control of formations larger than a brigade was beyond the generalship of the young Army. In the medical establishment, efforts were equally restrictive in scope and effect--there was regimental aid and nothing more. The medical director is reported to have galloped about the battlefield with the commanding general, pausing to offer aid but exercising no direction or control over medical support to the battle.[8]

Reportedly, less than fifty ambulances supported the battle, those having been scattered throughout the regiments without apparent reason as to what points casualties should be evacuated. A single hospital was planned at Sudley Church, while numerous others sprang up in houses where volunteers rendered care. Bandsmen were supposed to act as litterbearers, but most fled and casualties just drifted "away" from the battle.

When the battle ended in the early evening, casualties were scattered about the field in ravines, groves, and thickets--abandoned by the Medical Department. The Surgeon General wrote in the official records:

> Men, dying and just dead, covered the floor (of the hospital at Sudley Church), and filled the rear yard with frightful misery. Civilians and soldiers had turned surgeons, and were amputating and binding up limbs. . . . That ghastly picture of carnage will ever be present before my eyes, and those half-smothered sobs and groans, and those death appeals will always ring their solemn chorus in my ears.[9]

Casualties remained on the field for several days in cold rain and searing heat, without food, water, or aid.

Finally, Medical Director William S. King organized a relief effort back to the field from Washington. General McDowell failed to gain permission from General Johnston to retrieve Federal wounded, ambulances became lost enroute, and the whole affair was turned around in failure almost equalling the miserable record of the Medical Department during the battle.

Lack of preparedness by the medical establishment might be cited as its chief cause of failure at First Manassas. Quite obviously, however, fundamental inadequacy in the conceptual foundations of medical support was more likely the case. The Union had learned that a collection of men does not constitute an Army, and the Medical Department had learned that a collection of practitioners does not constitute competent medical support for an Army.

Antietam--After Manassas, the Union underwent an extensive reorganization when President Lincoln placed General George C. McClellan in charge of forces around the capitol. McClellan, a great organizer but also a cautious general, began a deliberate training program for the massive numbers of new troops which had poured into the army following Manassas. Lincoln urged quick action against Johnston who was still intrenched at Centreville; however, McClellan resisted. In fact, he waited through the fall, winter, and into the early Spring of 1862. Finally, contrary to the President's urgings, McClellan launched a campaign against the Confederate capitol via the Virginia Peninsula.

He took the Army of the Potomac, as now officially designated, by sea to the peninsula. Hoping to surprise the Confederates, he found instead that because of his reluctance to move, the Confederate forces on the peninsula had been reinforced by Johnston's from Centreville. McClellan began to advance on the capitol on April 4, 1862. After several intense battles, McClellan withdrew to the coast.

In the meantime, General T. J. "Stonewall" Jackson had conducted his brilliant campaign against three small Union armies in the Shenandoah Valley and returned just in time to participate in the Peninsular Campaign. Importantly, General Robert E. Lee now commanded the Confederates.

Jackson's successes in the Valley caused Lincoln to combine the forces there into a single Union Army, the Army of Virginia, under the command of General Alexander Pope. After McClellan withdrew to the coast, Lee, rather than to pursue him, moved northward and it was this new army which he met and defeated at the Second Battle of Manassas. With Lee now poised to seize Washington, McClellan rushed back to protect the capitol and to assume command of all the Union forces in the East.

But Lee did not move against Washington and apparently did not intend to. Instead, in September of 1982, his Army of Northern Virginia marched into Maryland intending to destroy Union lines of communications and industrial centers in the Union heartland. McClellan moved against him and the two armies met on September 17, 1862, the single bloodiest day of the war, at Antietam Creek, near Sharpsburg.

The Union Army staged from Frederick against an enemy who idled in the mountains to the west. The Union possessed superior numbers and, although hastily organized, was for the first time relatively well prepared. McClellan moved westward, and after initial battles in the gaps of South Mountain on the fifteenth, the battle lines were drawn along Antietam Creek.

The Confederate forces were disposed west of the creek from north to south, with a front of more than four miles. This was to be a much greater battle in several dimensions than First Manassas. McClellan's plan, in typical Napoleonic fashion, was to roll up the enemy's left flank, with supporting attacks at the center and the right. Elements of six Union

corps employed some 50,000 combatants against the Confederates under General James Longstreet and Jackson, who commanded almost a fourth less.[10]

The battle was not complex, consisting of deliberate crossings of the creek in the northern sector and fighting to cross by forces in the south. The battle progressed from north to south, with corps-sized attacks by the Union, answered by similar Confederate counterattacks. Pressure was applied down the line to the center and left in similar fashion. While the battle lacked dramatic maneuver, except for some Confederate counter moves, the fighting was intense with staggering losses on each side. Lee finally withdrew on the evening of the eighteenth.

The Federals had suffered over 12,500 casualties (about 3,000 killed and 9,500 wounded), far surpassing the numbers of First Manassas.[11] Yet amazingly, practically all the Federal wounded were evacuated by darkness on the eighteenth to a dozen tactical hospitals intelligently located to support the battle. Over 200 ambulances were employed and medical supplies were plentiful. Above all, casualties incurred on the Union right flank had been rapidly conveyed to shelter and care by two o'clock on the eighteenth.[12] On the left, the results were satisfactory but less efficient. An extraordinary improvement had been wrought in field medical care in the year since Manassas.

This change resulted from the partial institution of an ambulance system. Moreover, the signs of a hospital plan were present in the battle. Patients received initial care and were then further evacuated to larger hospitals at Frederick and finally to Washington. Finally, a medical logistics system was developing and it provided medical supplies to the battlefield in proportions never seen before.

<u>The Wilderness</u>--After Antietam, the war shifted south and back north, ultimately turning in favor of the Union with the pivotal victory at

Gettysburg. The beginning of the end really came in May of 1864 as General U. S. Grant, now in command of all the Armies, poised to cross the Rapidan. His aim was to occupy a position between Lee's army, now intrenched south of Culpepper and its source of supply, Richmond. With General George C. Meade formally in command of the Army of the Potomac, Grant's strategy was to cross the Rapidan, east of the intrenched Confederates, push on to the open country where he could threaten Richmond, and at the same time protect Washington.

This battle was unlike First Manassas and Antietam, for it was more of an encounter than a planned attack. As Grant's four great infantry corps moved across the fords and stretched in a great column toward Spotsylvania, Lee ordered an attack against the column's right flank. The battle was confused and dispersed in the thickly wooded terrain. Grant doggedly counterattacked. What was actually a series of battles extended for two days, May 5-6. Grant, after terrible losses, eventually prevailed and the final campaign was underway in earnest.

The battle was efficient in destruction and service support, despite confusion and wide dispersion. The total number of Union killed, wounded, and missing was just short of 30,000![13] With the exception of a few Union casualties isolated in the thick undergrowth and consumed by a raging fire, the effectiveness of the medical support was so different from First Manassas as to belie the passage of but three years. The medical establishment was rational, well-organized, and prepared to support the widely distributed forces.[14] Stretcher bearers moved efficiently about the fields, removing wounded to regimental aid stations (no longer <u>hospitals</u>). Ambulances then took the wounded to division hospitals. From these, patients were transported to the "base hospital" at Culpepper, and afterward as the battle shifted southward, to that at Fredricksburg. From these "depot" hospitals,

patients were transported by rail, road, or river to Aquia Creek and Washington. The medical system finally had found its rightful role in the war.

Little refinement occurred in the medical support system before the war ended at Appomatox in 1865. It had, however, been adopted throughout the Union forces in essentially the same form as that at the Wilderness. Upon close examination, the medical organization that crossed the Rapidan with Grant's Army was in all essential features the same organization which took the field in 1917, and which represents the doctrinal basis for the Army's medical support which would go to war in 1983!

Military Medicine and Doctrine

Before concentrating on changes in medical support doctrine which produced this amazing transformation in care, a brief definition and review of doctrinal terminology as applied to military medicine is appropriate.

In general terms, doctrine implies a body of principles, methods, or procedures to be regarded as a guide to action in military affairs, most notably in combat. Organization, equipment, and principles are so inextricably linked that any treatment of doctrine makes them practically inseparable. They are interdependent and when one changes so must the others. Tactical and strategic doctrine influence organization, which then dictates weapons and equipment, and vice versa. To fully appreciate the doctrinal interrelationships in a military setting, one must study the broad environmental factors at work as doctrine evolves.[15]

We might then define medical support doctrine as "what is likely to work best in supporting a military force in a given set of circumstances." Like the broader concept of military doctrine, its application extends from the front line to the interior and pervades every activity that contributes to support of forces at war. While our definition might appear to permit

or even encourage broad discretion, doctrine demands general application for the military machine is designed to implement doctrine.

A treatment of doctrine is inherently difficult because analysis is required. Analysis of course involves the reduction of a thing into its parts and contradicts the interdependent nature of military/medical support doctrinal elements. Thus, the danger in presenting the component elements of such doctrine is that relationships can become obscure. Nevertheless, for the sake of this discussion, the manner of presentation is analytical.

First, medical support doctrine (called simply "doctrine" hereafter) includes but transcends the practice of medicine in the field and at successive echelons of support. The state of medical art and science is of course at the heart of doctrine; however, our object here is not medical practice but the effect that practice has on everything else in doctrine. Moreover, we examine it amid rapid and powerful change in war.

Enumeration of the elements of doctrine is not generally consistent, but most students would agree they should at least include: medical organization; tactics, or the manner in which medical units are employed to support action; the evacuation system; the hospitalization system; the relationships of tactical and strategic support; medical logistics; and the system of governance or direction of the support efforts. Critics might suggest that this list is too restrictive and combat-oriented. To be sure, disease prevention, research, education, training, and a host of other elements are a legitimate part of doctrine; however, the former abbreviated list will suffice for our purposes.

Doctrine in 1861

Tactics--Medical support tactics or "sanitary tactics" as they are called in the rare references on the subject, were far more limited in scope than those employed today. Tactics were initially limited to the regimental medical element following its unit into battle and once engaged, establishing itself to render care. How patients were to be removed beyond the regimental "hospital," or even if they were to be and to where, were not routine elements of tactical planning in the first days of the war. The correlation of medical support to battle planning, troop dispositions, and lines of communications does not seem to have routinely existed until well into the conflict.[16] Importantly, the concepts of triage, differentiation of medical functions by specialized units, and employment of successive levels of sophistication in care were absent from doctrine in the early days.[17]

Organization--Each regiment had a surgeon, an assistant surgeon, a hospital steward, an orderly for each surgeon, and a few men detailed from the line to act as cooks and nurses. The bandsmen were to serve as stretcher-bearers.[18] Organization and staffing of division and corps hospitals during the first months was ad hoc, certainly not standard, and appears to have varied at the whim of the staff surgeon. While large hospitals did spring up around Washington they, like many field hospitals, were largely the results of volunteer efforts. There was a Surgeon General and a small office staff, as well as surgeons at each major level of command. As incredibly limited as it may appear, this was the extent of the medical organization.

Evacuation--How an Army evacuates its wounded is the most revealing element in medical doctrine, for it mirrors employment concepts, the hospital system, and practically every other part of that doctrine. Obviously

it is usually the first element to require adaptation to changes in technology, medical practice, military organization, or tactics. It is not at all surprising then that this element received early attention in Civil War medicine, particularly after the fiasco at Bull Run.

However, an Army-wide system as such did not develop until after Antietam. While the regiment may have had an ambulance or two, there was no established guidelines on how to employ them. Some units were equipped with stretchers but most improvised, and in large measure the wounded just somehow made their way to the rear. The regiment cared for a few at the front and the general hospitals received them in the rear--everything in between was unplanned, haphazard, or completely lacking.[19]

Hospitals--The state of medical and surgical practice at the outbreak of the war was indeed limited. Disease was barely understood and surgery, beyond amputation, was undeveloped. Consequently, hospital care was largely custodial and often more harmful than curative. In fact, sepsis was such a misunderstood phenomenon that it came as a shock to military surgeons when their patients fared better in tents, barns, or even in the open than they did in the so-called "hospitals."

In conceptual terms, there was really no hospital organization or system. The regiment held patients in bed, but the capability was limited and inefficient. However, commanders found one very favorable aspect to this arrangement--when troops were well enough to return to duty, they did! Those evacuated to the rear often never returned for any reason. This fact and pure parochialism explains the reluctance to dispense with regimental hospitals. Otherwise, how hospitals above division were allocated in the early days is hazy at best. Certainly there was little attempt to provide care on an area basis, to designate facilities as holding units for further

evacuation, to specialize by intensity or type of care, or to otherwise differentiate hospitals as we routinely do today.

Linking Tactical and Strategic Support--Effective evacuation and treatment act as a powerful multiplier, for they not only bolster soldier morale, they serve as the single greatest source of replacements in combat. Despite these accepted facts, commanders generally do not give medical affairs high priority in resource allocation. The medical system at Manassas and other early battles not only negatively affected soldier morale, they supported the predispositions of line commanders. Resources were meager and surgeons at all levels of command were unable to influence commanders toward rationalizing a system of care. The Surgeons General enjoyed no greater influence and consequently there was just no strong interest among the Army leadership to reform.

Equally absent was vision in the medical community. There is little to suggest that anyone saw a need to connect the medical care efforts in the field with those in the rear, to develop a means of evacuating patients between the two, to return patients to their units as fast as possible, to develop a system of medical replenishment at the national level, and, most critically, to develop a strategic system of hospitals and evacuation which would reflect and sustain the overall conduct of the war.

Medical Logistics--The provision of medical materiel was a bit more effective than other elements of medical support, although it too fell far short of meeting needs on the battlefield. The reason, once again, is that supply was largely the responsibility of the regiment and medical care was a concern as the regiment was organized and provisioned. Also, volunteer organizations such as the Sanitary Commission, the largest and most influential of several publicly supported volunteer groups seeking reform in the

medical system and providing care and supplies for the forces, assisted greatly in making care available on the battlefield.

Yet the key determinent of a successful system of medical logistics doctrine escaped planners until late in the war. No mechanism to integrate sources, stockages, distribution, and standardization existed. It is only fair to say, however, that this was true of other types of materiel, for meeting the needs of a large, mobile army was a new challenge to the still emerging nation.

Direction of Medical Suppport--In 1861, medical leadership at the national and subordinate levels was generally aged, conservative, parochial, inept, and unrespected. Even the most objective appraisals of its work are scathing. A review of the records can convince one that the sole function of the early leadership was to secure materiel, expand its own status and influence, and to write voluminous accolades about fellow members of the profession. The official records of the early days are replete with foundless commendations of the Medical Department's performance and sadly lacking in perceptive analysis of the real problems confronting it.

A terrible lack of vision prevailed and the emphasis was on "things" rather than "concepts." The Surgeon General, and surgeons at lower command levels, were apparently not an integral part of campaign or battle planning. Medical logistical support, hospital employment and allocation, and strategic evacuation were not well developed prior to campaigns. One might conclude that the medical department had no appreciation for the map. Perhaps this is an unfair conclusion for not much evidence is available to show that commanders used, or even had available to them, battle maps to the extent we now take for granted.

It is fair, however, to say that the medical department had little participation in tactics or grand strategy. There was no serious attempt

to study plans, conceptually develop a scheme of support, design an appropriate supporting structure, and then marshall required resources.

Impetus for Change

In view of the state of medical support at the time of First Manassas, its wretched performance is not surprising. However, as illustrated both by Antietam and the Wilderness, the situation gradually improved to commendable proportions by war's end. Why it improved is not readily evident, but forces which ultimately shaped improved doctrine can be identified. To do so not only reveals the foundations of modern doctrine, but since similar forces remain at work today, we should expect doctrine to react to them in contemporary terms.

Technology--Technology seems to have had its impact in every war, but the Civil War occurred early in the Industrial Age and consequently the changes wrought were perhaps more striking and numerous than in wars before or since. The most significant technological developments were not necessarily in instruments of destruction, but rather found form in transportation, communication, and means of mass production.

Medical practice, in a technological sense, did advance during the war. As for medical doctrine per se, the major impact of technology was indirect. While this general conclusion has not received wide attention in the records, nor would all agree to its validity, the conoidal or "minie ball" perhaps was the major force which shaped doctrine. The rifled cannon had some lesser impact. If one carefully studies the battles of the war, he can discern a gradual dispersion of tactical formations, a more extended firing line, and ultimately intrenchments in 1864. Massive formations were outmoded in view of the increased range, accuracy, and rate of fire of weapons. Earnest Fisher[20] and Perry Jamison[21] report that formations were spread and

how fronts consequently increased. Any sort of support mechanism was confronted with a far more difficult challenge in rendering service at the front. The medical apparatus was a prime example and therefore was forced to contemplate a rational means of providing that service. Thus the ambulance and hospital systems were practically imperatives of a changing form of tactics.

The advent and wide use of the steam engine had almost equal effect. Its proliferation on rail and water provided the basis for long-range evacuation of casualties, provision of medical materiel, and mobility of medical assets. When coupled with improved communications, a perspective of theaters, campaigns, and battles could be better brought to bear in planning. These developments helped fill the void between front-line and interior hospital.

Tactics--While tactics changed because of new weapons, as the war progressed one can sense an improvement in generalship. By the end of the war, in contrast to the brigade-style engagement at Manassas, Grant and others were able to effectively maneuver large formations. Although such maneuver is certainly elementary in terms of modern communications and mobility, it was nevertheless developing and strikingly different than at First Manassas. Grant apparently achieved an ability to move his corps by careful selection of his generals and development of an organizationally improved Army. Spans of control had been reduced and division organization was greatly standardized. With these changes came a more rational sense of things on the battlefield. Consequently, medical organization adjusted itself and support was more carefully planned.

Experience was probably the greatest teacher and, after many campaigns, medical men finally conceived a system which supported the Army at all levels. They gradually gained the ability to tailor that support to

the battle at hand. The best example of this remarkable development process can be seen in a careful reading of the reports of the Wilderness.[22]

Public Pressure--Improved communication and transportation carried news quickly. The considerable photographic and news records of the war indicate a wide following by correspondents. Volunteer organizations of concerned citizens quickly formed to "assist." As reports and observations of carnage like Manassas became public knowledge, these groups became even more influential, the Sanitary Commission most notable among them.[23] They were so powerful in fact that they caused removal of several key medical leaders and forced their way onto battlefields to render aid. Theirs was a powerful force in demanding a system of hospitals, ambulances, and materiel. There is some reason to believe that their efforts to implement doctrine predates those of military men.[24] In light of our most recent war experience, we can readily appreciate the powerful force of the public and can imagine what impact it would have should medical care be inadequate on a European battlefield!

Genius--The final factor which we shall credit in shaping doctrine is genius--that amazing phenomenon where men rise to the occasion to find solutions in time of need. Gaps in doctrine were not filled quickly and although a form of field hospital and ambulance system had been instituted by Barron von Larrey, who introduced them into the French Army in 1747, they had not found their way to the American armies.[25] Unfortunately, these systems had to be rediscovered by brilliant men through trial and error.

Many would credit Jonathan Letterman's genius with the singular development of what we know today as ambulance, hospital, and logistical doctrine. While no greater contribution was made by a medical leader in the war, it is unfair to countless officers in the field to give Letterman all the credit. His memoirs provide a comprehensive review of his work and

trace the evolution of major elements of doctrine under study here.[26] There is, however, too much evidence to show that Letterman's genius lay in organizing and implementing other's ideas and maximizing the advantage of his position to see things improved.

For example, a system of hospitalization was first used at Donaldson in February 1862, and ambulances were used there much as they would be in the system of Letterman's design.[27] Moreover patients were further removed by steamer to base hospitals at Cairo. This is of course the essence of tactical and strategic linkage in doctrine. The records show similar organizations widely occurring in both East and West, yet their implementation army-wide was resisted by early leadership of the Medical Department.[28] Great ingenuity and common sense were exhibited by men in the field who improvised, reorganized, and provided support despite the leadership.

Letterman's lasting contributions once he became Medical Director of the Army of the Potomac were: (1) recognizing imperatives for change; (2) seizing upon methods working elsewhere in the Army; (3) synthesizing a total system using these ideas; and (4) implementing change on a wide scale.

The Outcome

These are but the principal factors which caused the medical apparatus to adjust, improve, and to change in response to stimuli. In brief, at the war's beginning, the medical community just had not kept pace with the outside world. As the realities of technology and public concern took hold, warfare changed and medical support had to similarly change. Great men responded with inventiveness and common sense.

Tactics--Emergent tactical support doctrine emphasized front-line aid, with evacuation to successively higher levels of care. Gone forever was the regimental hospital, replaced by division-level field hospitals erected

under tents. Regimental personnel were responsible for recovering the wounded at the front-line and rendering aid there or at the regimental aid station a few hundred yards to the rear.

From the aid stations (or "depots for the wounded" as they were sometimes called), horsedrawn ambulances moved patients back to the field hospitals. These hospitals, to some extent at Antietam, and in splendid fashion in the Wilderness, were carefully placed so as to best support their divisions. Their functions varied a bit according to the intensity of battle. In intense engagements they functioned much as a division clearing station, and, as the battle waned, they pursued longer-termed and more comprehensive care.

The system for selecting patients for evacuation further to the rear and the means for their evacuation were, however, never well developed. Mobility of the combat force appears to have dictated how long patients were held at division facilities. Generally, quartermaster wagons, delivering supplies to division, back-hauled its patients to "advance base" hospitals. Divisional ambulances were not normally used for this task unless the Army faced a quick move.

This doctrine was flexible and permitted employment according to the battle plan. Despite a few isolated failures, the last campaign in the East clearly reflects that the medical structure could be employed to meet the overall tactical scheme. Coordinated planning of the Medical Director's organization and the General's plan of battle finally found realization in the final battles.[29]

Organization--As we have noted, Letterman can be credited with instituting division-level changes in ambulance, hospital and logistical operations. In the Army of the Potomac, he implemented the ambulance system in

August 1862[30] and the hospital system[31] and the logistics system[32] in October 1862.

Ambulance and hospital functions were organizationally separated, the former assigned to the Quartermaster and the latter becoming the sole responsibility of the Medical Department. Each Corps had an organized ambulance unit (regimental in size) of about two hundred vehicles. The unit was divided into company-sized elements, each commanded by a lieutenant of the line. He commanded about fifty ambulances and 250 men in support of a division.[33]

As already indicated, regiments were organized to render first aid only. In battle, one surgeon remained at the aid station with a few corpsmen, while all other personnel congregated at division hospitals to assist in surgical care. Organization of division and "depot" hospitals became standard, although the latter is not well published in the records. After Antietam, however, these "advanced base" or "depot" hospitals appeared routinely.

Evacuation--Evacuation doctrine is evident from the discussions of tactics and organization, but its key characteristics merit elaboration. They are efficient removal of casualties to appropriate levels of care and maintenance of continuity of care. In each case, however, they existed in slightly different form then we've come to expect in modern medical care. First, "appropriate level of care" in a Civil War context should not be inferred to mean that greatly different capabilities existed among the hospitals. Rather, patients were evacuated rearward based on the tactical situation, the expected length of recuperation of the patient, and the numbers of casualties encountered by the field system at a given time. Secondly, continuity implies a rather smooth flow of evacuation from front to rear, ensuring that the patient receives care at each stage and

reasonable attention while enroute. Where in the early battles countless lives were lost in the haphazard arrangement of transferral from battlefield to interior, the new system presented a more systematic and continuous arrangement of medical effort.

The divisional ambulance company allocated its leaders and ambulances to brigades and further to regiments. In combat, ambulances were generally staged at or near field hospitals behind their brigades. Regiments were supported by three to five ambulances, which were "shuttled" to advanced positions between the hospital and the aid station. As an ambulance passed to the rear with patients, one would shuttle forward to collect patients. One immediately recognizes this as the very same system used by our motorized ambulances today!

A real system of evacuation from divisional hospitals to the campaign advanced base (also called staging, operational, or depot base in various sources) hospitals never materialized. Generally, returning quartermaster supply wagons were used. This terrible arrangement is reported in many soldier diaries, describing the awful trips from Fredricksburg to Aquia Creek.

Yet the next leg of evacuation became highly refined--from the advance base to the interior general hospital. Here we must describe the development of the evacuation hospital. Two types of hospitals were found at the advance bases, such as Culpepper and later Fredricksburg at the Wilderness, and Fredrick at Antietam. The first type was the evacuation or "depot" hospital, which was set up only to render care to those awaiting further evacuation. These were large, tent-covered arrangements which could be quickly erected and disestablished as needed. The other type was also set up in tents, but generally cared for patients for extended periods. Both did not always exist simultaneously and how their need was determined is

unclear. Apparently, the Medical Director of the Field Army directed these efforts. Nevertheless, the principles of the evacuation and mobile surgical hospital can be seen at this early date.

Strategic evacuation, from operating base to the interior, became quite efficient in relative terms. Rail and river were the primary means, although the campaigns near the capital used roads to evacuate wounded back to Washington, Baltimore, Philadelphia, etc. Box cars and steamers eventually were crudely equipped to carry patients. However primitive these accommodations were in modern terms, they proved effective, especially at the Wilderness. Importantly, this element became a matter of routine planning and it eventually became highly efficient.

Hospitals--Little more is needed about the organization and employment of hospitals. However, other aspects of hospital doctrine did evolve.

After finding that patients fared better in tents than in buildings, tentage became the preferred housing for hospitals. They also offered greater flexibility, mobility, and adaptability for combat. Hospitals, particularly those of the division, were often grouped to enlarge surgical staffs and effect some specialization. The majority of cases were operated on before evacuation, the number of primary cases being great considering current practice.[34] Despite the primitive state of surgery, those fundamental doctrinal principles upon which our current field hospital system is based were founded in the Civil War. Functional differentiation, specialization, mobility, and similar principles were quite evident in this developing system. Furthermore, hospital design, staffing, administrative organization, and other aspects of fixed hospital doctrine likewise developed.

Linking Tactical and Strategic Support--The system of evacuation reveals that the front and rear had been linked, but the final campaign

graphically shows that the leadership of the Medical Department had finally grasped the concept of strategic medical planning. An apparatus had been organized; it then had to be related to the theater and the campaign.

Although oversimplified here for brevity, this linkage was accomplished through three categories of effort. First, medical materiel requirements for the campaigns were carefully calculated. A forward medical depot was planned near the forward rail head or river base (i.e., Culpepper and Fredricksburg). Reserve stocks were readied on rail in Alexandria. Replacement ambulances were issued, with reserves held ready for distribution. Secondly and in addition to the logistical effort, depot hospitals were planned for Culpepper, and quickly established at Fredricksburg as the battle shifted to the southeast. Finally, the evacuation system was well-planned using rail from Culpepper and both river and road from Fredricksburg. In evacuation, hospitalization, and logistics, strategic planning was finally effected by the medical hierarchy.

Medical Logistics--The medical supply system does not receive as much attention as other aspects of Civil War medicine, but we can discern it's essential features from the reports. Like the regimental hospital, regimental resupply died an early and fortunate death. The need to standardize stockages, position forward, refine distribution, and streamline resupply was soon recognized. Regimental aidmen used medical supplies from their knapsacks on the battlefield. As ambulances came forward, they brought resupplies to the regiments and picked up their own resupplies at hospitals as they delivered patients. Division stocks were carried by medical trains (wagons) and were replenished by quartermaster trains from advanced bases. Operations at the advanced bases have been covered except to note the development of rail mounted medical warehouses. These were used quite

early in the war in Pope's campaign in northern Virginia and practically became a matter of standard practice.

Assuredly the most important logistical improvements were supply tables for medical sets, kits, outfits, and standardized stockages of materiels in the divisions. The first vestiges of large scale procurement of materiels according to standard specification also appeared in the war. The modern medical logistician could quickly identify with these logistical methods.

Conclusion

After reviewing medical support doctrine as it evolved to 1865, one knowledgeable in current doctrine might well ask, "So what?" or "What's new?" If offered rhetorically, his own response would likely be: "What actually happened during the Civil War was simply a distillation of common sense and that is why it appears to be such a major part of current doctrine." Both question and response are fair and would certainly support the first point of this paper--that the Civil War was indeed the genesis of our doctrine. But it would miss the second point. That is, having seen how forces shaped doctrine, have current precepts kept pace as those same forces have affected warfare since the Civil War?

Despite immense change during the 120 years since that war, particularly changes in technology, our medical doctrine remains practically the same! It remains conceptually as an uninterrupted, linear support scheme, from front to rear, employing the same principles of triage and hospitalization. It has perhaps varied in a significant way only in the rapidity and dimensions of transportation. With the forces we saw at work in the Civil War, the passage of more than a hundred years, and countless technological miracles since that war, surely the doctrine must at least be intellectually challenged for soundness. Can we expect ambulances to rush forward to

recover patients, remove them to vulnerable hospitals "behind the lines," and all the rest, on a battlefield such as we might expect in Europe?

Between the Civil War and World War I, much attention was given to documenting and refining medical doctrine in the Army. At Fort Leavenworth and elsewhere, in the wisdom of medical leaders, men like Edward L. Munsan were tasked to study and write doctrine on "sanitary tactics." The detailed works that he[35] and others[36] produced were fascinating, and useful to junior officers in their training. The doctrine was of course that of the Civil War, but it served well for World War I and beyond. These manuals served still another purpose. These were the days of staff rides and war games, pitting contemporary doctrine against the battlefields of the Civil War. By doing so, a continuous critique of doctrine vis-a-vis the changing environment of the machine gun, the airplane, the truck, etc., was demanded. That sort of continuous, real-time scrutiny by the medical community seems to have vanished.

In tracing the evolution of medical support as has been done, not only has some interesting history been reviewed, but the powerful shapers of doctrine have been deliberately repeated and emphasized. Military men once gave great attention to studying and writing on such matters, but somehow interest has waned. Current doctrine seems particularly limited in the field manuals available to junior officers. But far more importantly, it seems we need to challenge the doctrine itself. One surely must ask, in view of all that is different in the Army of 1983 and that of Grant as it crossed the Rapidan, "What <u>is</u> new?" "What needs to be questioned in view of Air-Land Battle 2000?"

ENDNOTES

1. Stewart Brooks, Civil War Medicine, p. 29.

2. George Worthington Adams, Doctors in Blue: The Medical History of the Union Army in the Civil War, p. 3.

3. Brooks, p. 29.

4. Horace H. Cunningham, Field Medical Services at the Battles of Manassas.

5. Ibid., p. 9.

6. US Army, Army Regulations, 1861, paragraphs 735-740; 1293-1294; 1323; 1337; 1330; 1336.

7. US War Department, The War of the Rebellion: A Compillation of the Official Records of the Union and Confederate Armies. Washington: Government Printing Office, 1880-1903, p. 326. (Hereafter referred to as Official Records (OR).)

8. Ibid., pp. 344-345.

9. George A. Otis and D. E. Huntington, The Medical and Surgical History of the War of the Rebellion, Vol. I, Part I, p. 115 (appendix).

10. OR XIX, Part 1, pp. 169-516.

11. Ibid., pp. 189-201. These figures include, in addition to the 2108 reported killed in the records, 1498 which died in hospitals. These casualties are better reported in Letterman's report on pages 106-117.

12. Harvard Valery, The Modern Organization of the Medical Department of the United States Army and its Application to One of the Battlefields of the Civil War, p. 19.

13. OR XXXVI, Part 1, p. 195. For a complete report of medical services, review pages 97-995.

14. Adams, p. 100.

15. Robert A. Doughty, Leavenworth Papers: The Evolution of US Army Tactical Doctrine, 1946-76, p. 1.

16. Louis Caspar Duncan, The Medical Department of the United States Army in the Cival War, p. 11.

17. Adams, p. 24.

18. Duncan, p. 57.

19. Ibid., p. 59.

20. Earnes F. Fisher, Weapons and Equipment Evolution and its Influence Upon Organization and Tactics in the American Army from 1775-1963.

21. Perry David Jamison, The Development of Civil War Tactics.

22. OR, XXXVI, Part 1, pp. 97-995, various reports by unit surgeons.

23. Brooks, p. 50.

24. Duncan, p. 2.

25. Ibid., p. 11.

26. Jonathan Letterman, Medical Recollections of the Army of the Potomac, p. 19.

27. Duncan, p. 2.

28. P. M. Ashburn, A History of the Medical Department of the United States Army, p. 7.

29. Duncan, p. 19.

30. Army of the Potomac, Special Orders #147.

31. Army of the Potomac, Circular: Medical Supply Table for the Army of the Potomac for Field Service.

32. Army of the Potomac, Circular: Hospital Organization.

33. Duncan, p. 5.

34. Duncan, p. 16.

35. Edward L. Munson, The Principles of Sanitary Tactics.

36. Gustavus M. Bleck and Charles Lynch, Medical Tactics and Logistics.

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